

Schmidt, Ehud J.

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REMARKS

Claims 1-17, 19-28, and 30 are pending in the present application. In the Office Action mailed September 11, 2007, the Examiner rejected claims 1 and 4-16 under 35 U.S.C. §102(b) as being anticipated by Atalar et al. (USP 6,628,980). The Examiner next rejected claims 2 and 3 under 35 U.S.C. §103(a) as being unpatentable over Atalar et al. in view of Nevo (USP 6,516,213). Claims 17 and 19-25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Atalar et al. in view of Nevo '025. Claims 26-28 and 30 are rejected under 35 U.S.C. §103(a) as being unpatentable over Atalar et al. in view of Nevo ('025).

The Examiner rejected claim 1 as being anticipated by Atalar et al. With regard to rejection under 35 U.S.C §102, MPEP §2131 states:

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.”
Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)

In the September 11, 2007 action, the Examiner cited col. 13, lines 66-67; col. 14 lines 1-11 of Atalar et al. as allegedly disclosing “wherein a gap formed between the plurality of RF coils and the housing is configured to increase RF sensitivity away from the probe.” Applicant respectfully disagrees, as is explained in further detail below.

As cited by the Examiner, Atalar et al. teaches “...in FIG. 6B, the expandable imaging loop (644) can comprise a core (650) surrounded and encased by an insulator (648).” Atalar et al. also refers to the expandable imaging loop (644) as an ‘expandable imaging coil’ as expressly stated in col. 13, line 50. Therefore, Atalar et al. teaches an expandable loop imaging coil (644) “can comprise of a core surrounded and encased by an insulator (col. 13, line 67; col. 14 line).” However, Atalar et al. does not teach or suggest “a gap formed between the plurality of RF coils and the housing configured to increase RF sensitivity away from the probe” as called for in claim 1. That is, Atalar et al. fails to teach a plurality of RF coils separated from an expandable housing by a gap therebetween. Instead, the expandable housing in Atalar et al. is the imaging coil. Therefore, Atalar et al. fails to teach a gap between its imaging coil and a self-expanding housing. Consequently, Atalar et al. fails to disclose each and every element of claim 1, as required under M.P.E.P. § 2131.

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Accordingly, that which is called for in claim 1 is not shown, disclosed, taught, or suggested in the art of record. As such, Applicant believes claim 1, and the claims which depend therefrom, are patentably distinct from the art of record.

The Examiner rejected claim 17 as being anticipated by Atalar et al. in view of Nevo. With regard to rejection under 35 U.S.C §103, MPEP §2131 states:

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

In the September 11, 2007 action, the Examiner stated that Atalar et al. does not teach the elements of claim 1 calling for the tracking coil and the MRI system configured to gate MR data during imaging. Office Action, 09/11/07, pg. 6. The Examiner cited col. 14, lines 21-40 and col. 15, lines 8-55 of Nevo as allegedly disclosing “wherein the tracking coil is configured to transmit signals indicating the location and movement of the RF coil assembly to the MRI system to facilitate MR data acquisition gating; and wherein the MRI system is configured to gate MR data acquisition during imaging based on the location and movement of the RF coil assembly.” Applicant respectfully disagrees, as is explained further below.

Nevo teaches a method and apparatus to estimate location and orientation of objects during magnetic resonance imaging. More specifically, Nevo teaches, “Once an activation of any gradient coil is detected, the processor digitizes the signal from the coils and process it to determine the level of the induced signals.” Col. 15, lines 20-21. Additionally, Nevo teaches, “The measured induced voltages in the set of orthogonal coils are used to calculate the amplitude of the voltage-vector and the angles between the voltage vectors of the different MRI gradient. These amplitudes and angles are used to estimate the location of the sensor in the MRI coordinate system and to estimate the orientation of the sensor.” Col. 15, lines 32-39. In other words, Nevo teaches “transferring real time location and orientation of the sensor.” Col. 14, lines 65-67. However, claim 1 calls for the MRI system to be configured to gate MR data acquisition during imaging based on the location and movement of the RF coil assembly. Nowhere does either of Atalar et al. or Nevo teach or suggest gating MR data acquisition during imaging based on the location and movement of the tracking coil. In fact, the word “gating” never appears in either

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Atalar et al. or Nevo. A combination of Atalar et al. with Nevo fails to teach or suggest gating during imaging merely because Nevo discloses a tracking coil.

Applicant further disagrees with the Examiner's conclusion that it would have been obvious to one of ordinary skill in the art to modify Atalar et al. with Nevo. Specifically, the Examiner stated that "[t]he motivation to modify Atalar et al. '980 with Nevo '025 would have been to provide a system with accurate readings of position or orientation of the coil throughout the procedure using commercially available tracking coils." *Office Action, supra* at 6. While col. 14, lines 24-26 of Nevo discloses that the tracking apparatus "can be custom-designed and built for the specific tracking application or assembled from commercially available components," there is nothing in the art of record to suggest that the tracking coil of Nevo is commercially available. Merely because the tracking coil of Nevo may be assembled from commercially available components does not mean that the assembled tracking coil is commercially available. Accordingly, the Examiner's statement of motivation is not supported by the art of record, and Applicant requests withdrawal thereof.

Accordingly, that which is called for in claim 17 is not shown, disclosed, taught, or suggested in the art of record. As such, Applicant believes claim 17, and the claims which depend therefrom, are patentably distinct from the art of record.

With respect to claim 26, a method is called for that includes gating data acquisition during imaging based on tracking data to reduce imaging artifacts. As explained above, neither Atalar et al., Nevo, nor a combination thereof discloses gating data acquisition during imaging.

Furthermore, while the Examiner asserted Atalar et al. and Nevo teach various aspects of claim 26, nowhere with regard to claim 26 does the Examiner provide any motivation for combining these references. Accordingly, a *prima facie* case of obviousness has not been met by the Examiner.

Accordingly, that which is called for in claim 26 is not shown, disclosed, taught, or suggested in the art of record. As such, Applicant believes claim 26, and the claims which depend therefrom, are patentably distinct from the art of record.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-17, 19-28, and 30.

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Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

/Kent L. Baker/

Kent L. Baker
Registration No. 52,584
Phone 262-268-8100 ext. 12
klb@zpspatents.com

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P.O. ADDRESS:

Ziolkowski Patent Solutions Group, SC
136 South Wisconsin Street
Port Washington, WI 53074
262-268-8100

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General Authorization and Extension of Time

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 07-0845. Should no proper payment be enclosed herewith, as by credit card authorization being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 07-0845. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extensions under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 07-0845. Please consider this a general authorization to charge any fee that is due in this case, if not otherwise timely paid, to Deposit Account No. 07-0845.

/Timothy J. Ziolkowski/

Timothy J. Ziolkowski
Registration No. 38,368
Direct Dial 262-268-8181
tjz@zpspatents.com

Dated: December 11, 2007
Attorney Docket No.: GEMS8081.204

P.O. ADDRESS:

Ziolkowski Patent Solutions Group, SC
136 South Wisconsin Street
Port Washington, WI 53074
262-268-8100